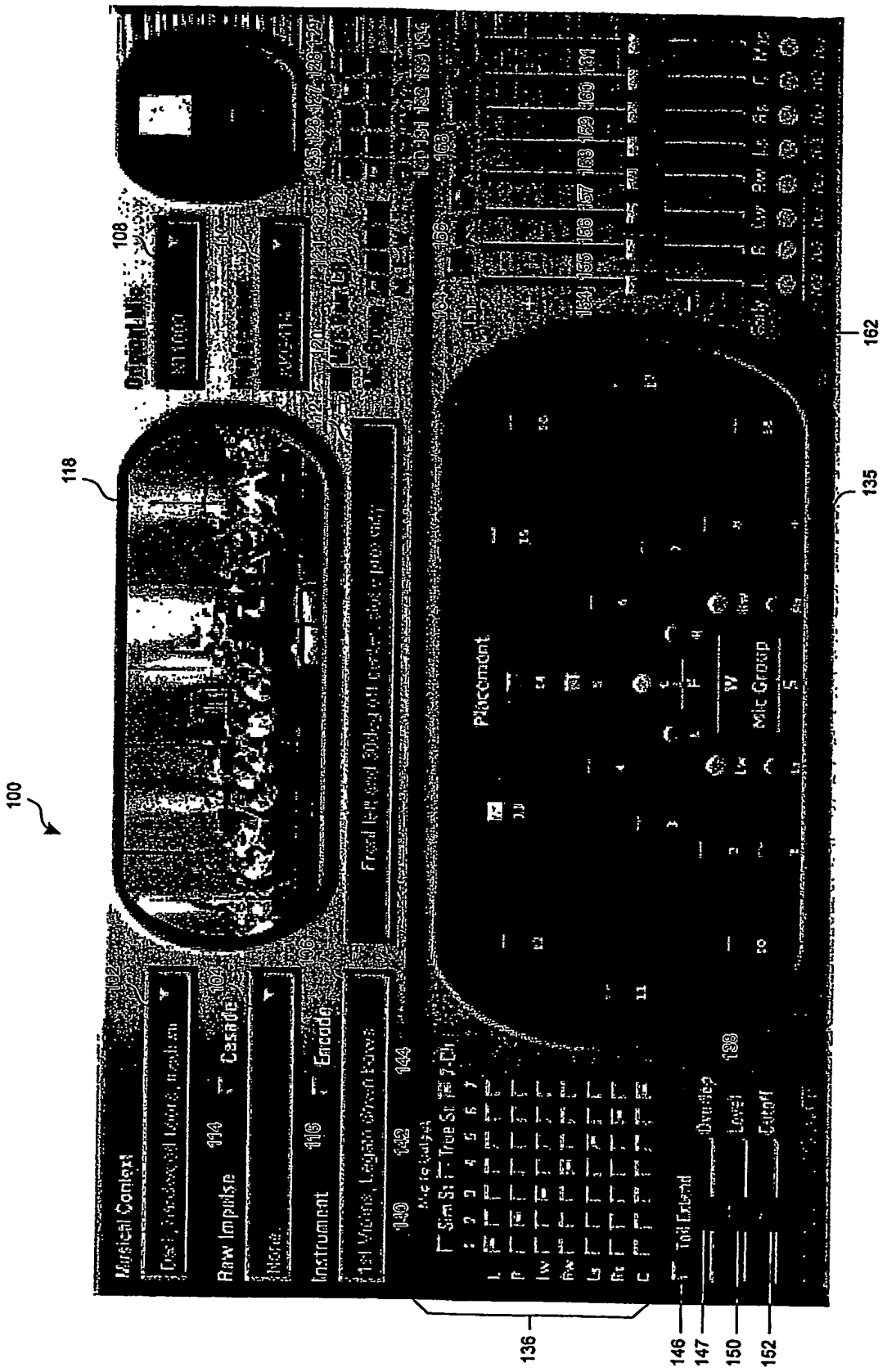
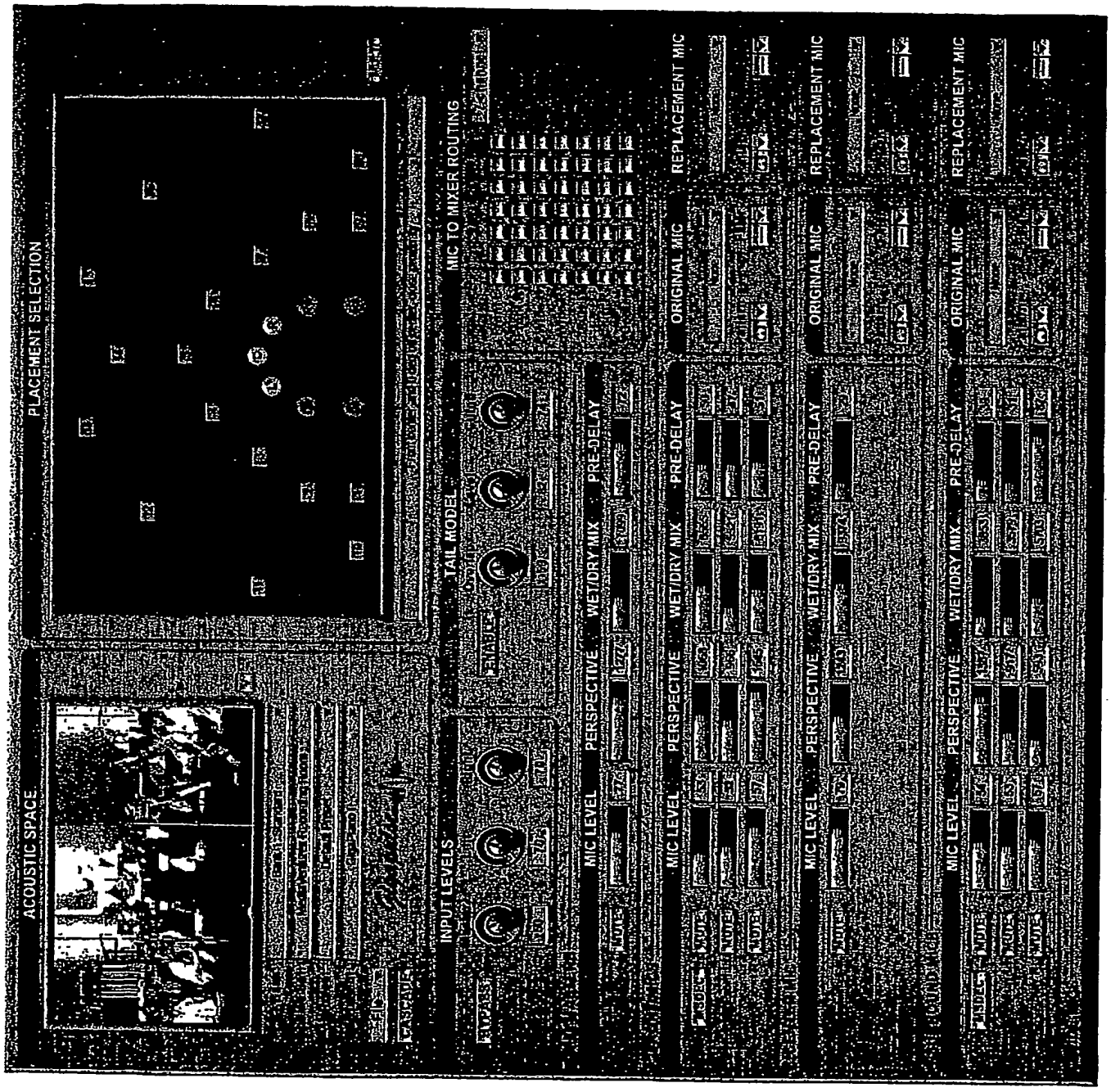


FIG. 1A

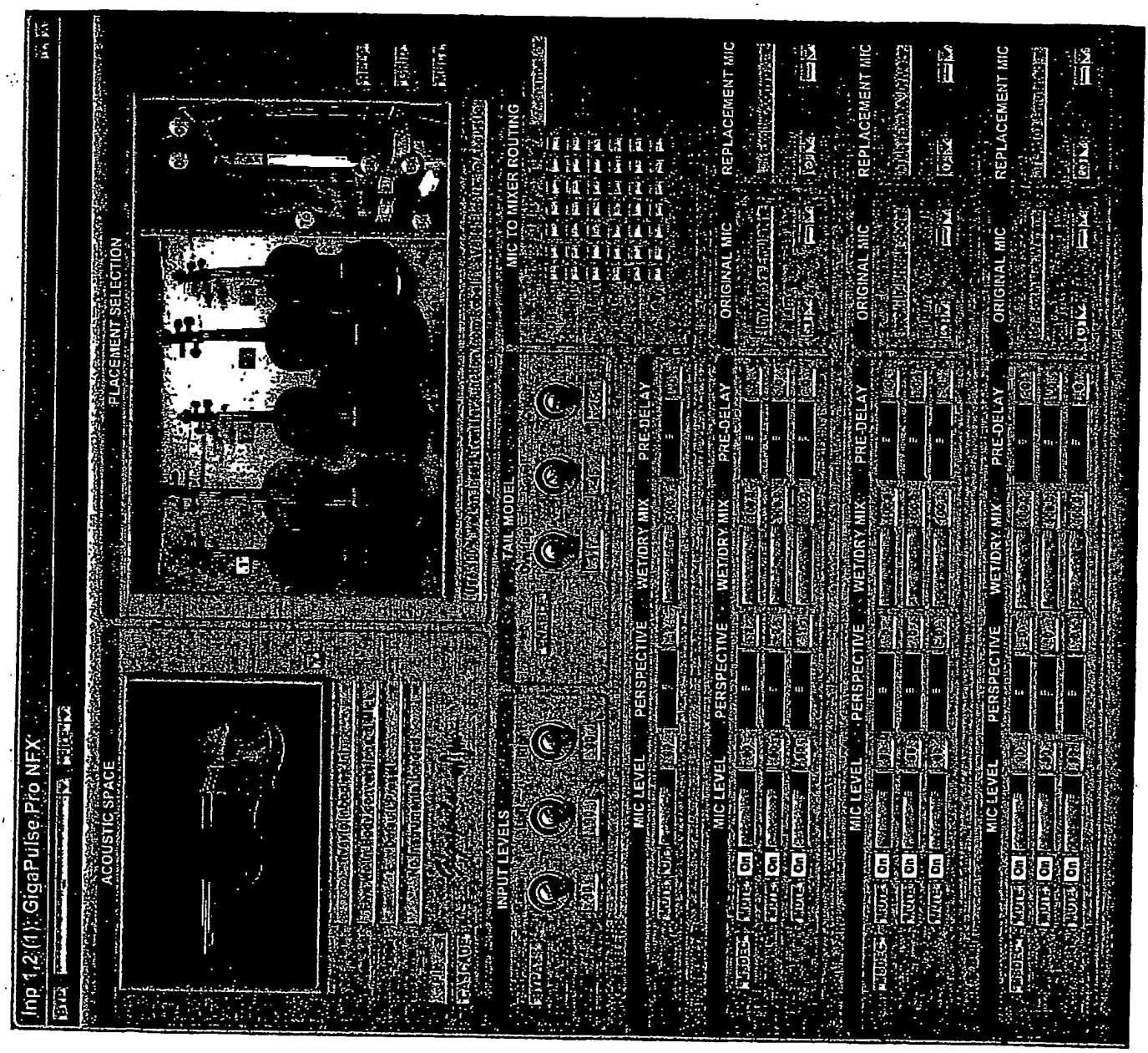
BEST AVAILABLE COPY

FIG. 1B



BEST AVAILABLE COPY

FIG. 1C



BEST AVAILABLE COPY

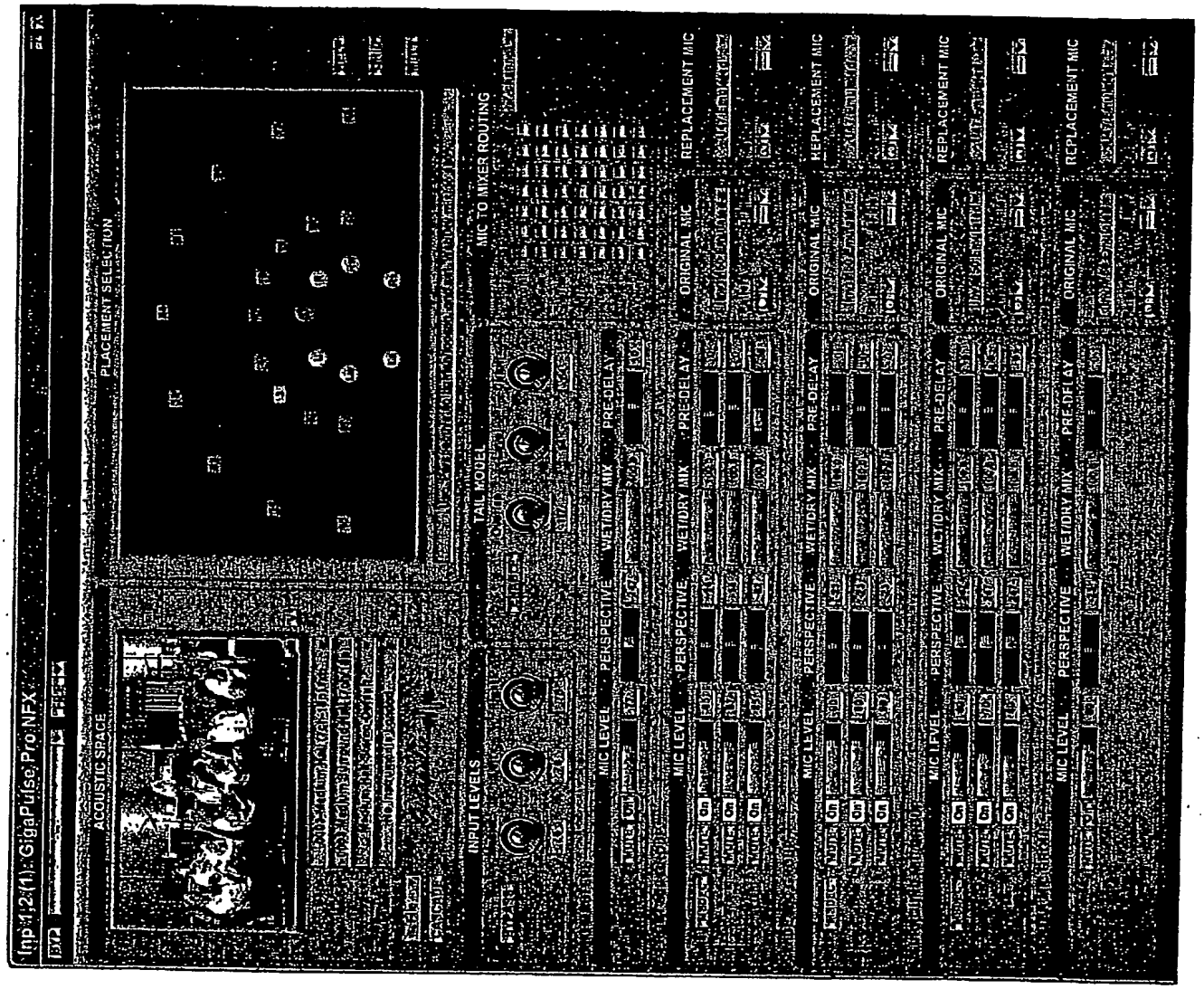


FIG. 1D

BEST AVAILABLE COPY

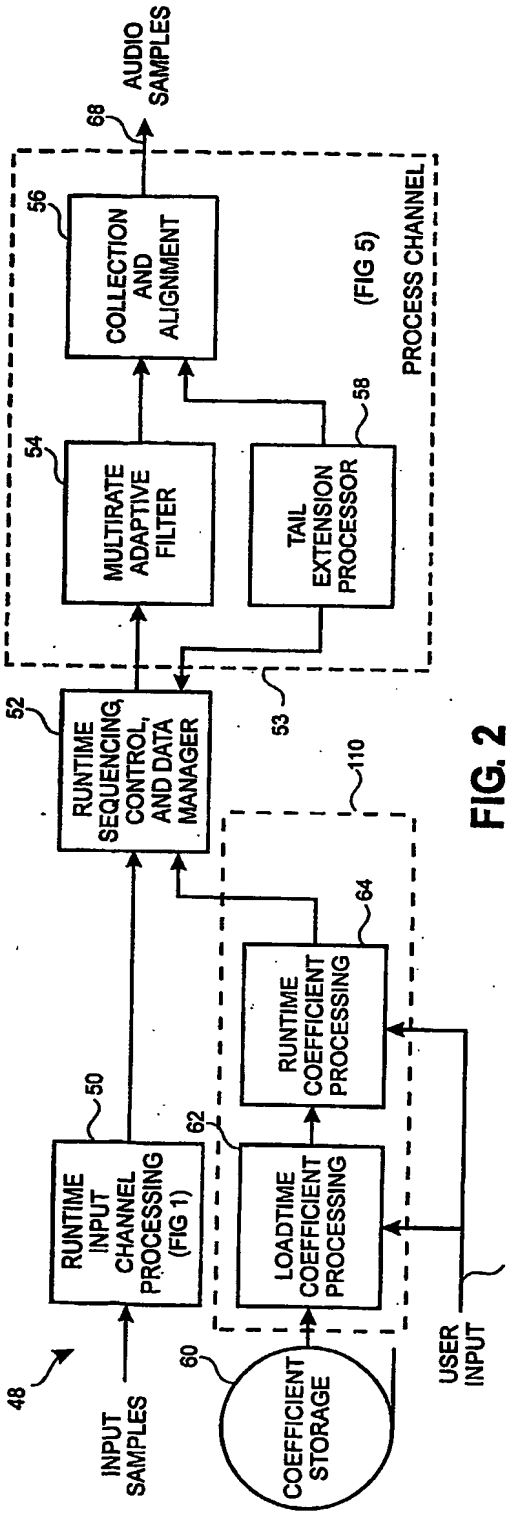

AUDIO SAMPLES
68
COLLECTION AND ALIGNMENT
56
MULTIRATE ADAPTIVE FILTER
54
TAIL EXTENSION PROCESSOR
58
(FIG 5)
PROCESS CHANNEL
RUNTIME SEQUENCING, CONTROL, AND DATA MANAGER
52
53
110
RUNTIME COEFFICIENT PROCESSING
64
RUNTIME INPUT CHANNEL PROCESSING (FIG 1)
50
LOADTIME COEFFICIENT PROCESSING
62
COEFFICIENT STORAGE
60
INPUT SAMPLES
48
USER INPUT
66

FIG. 2

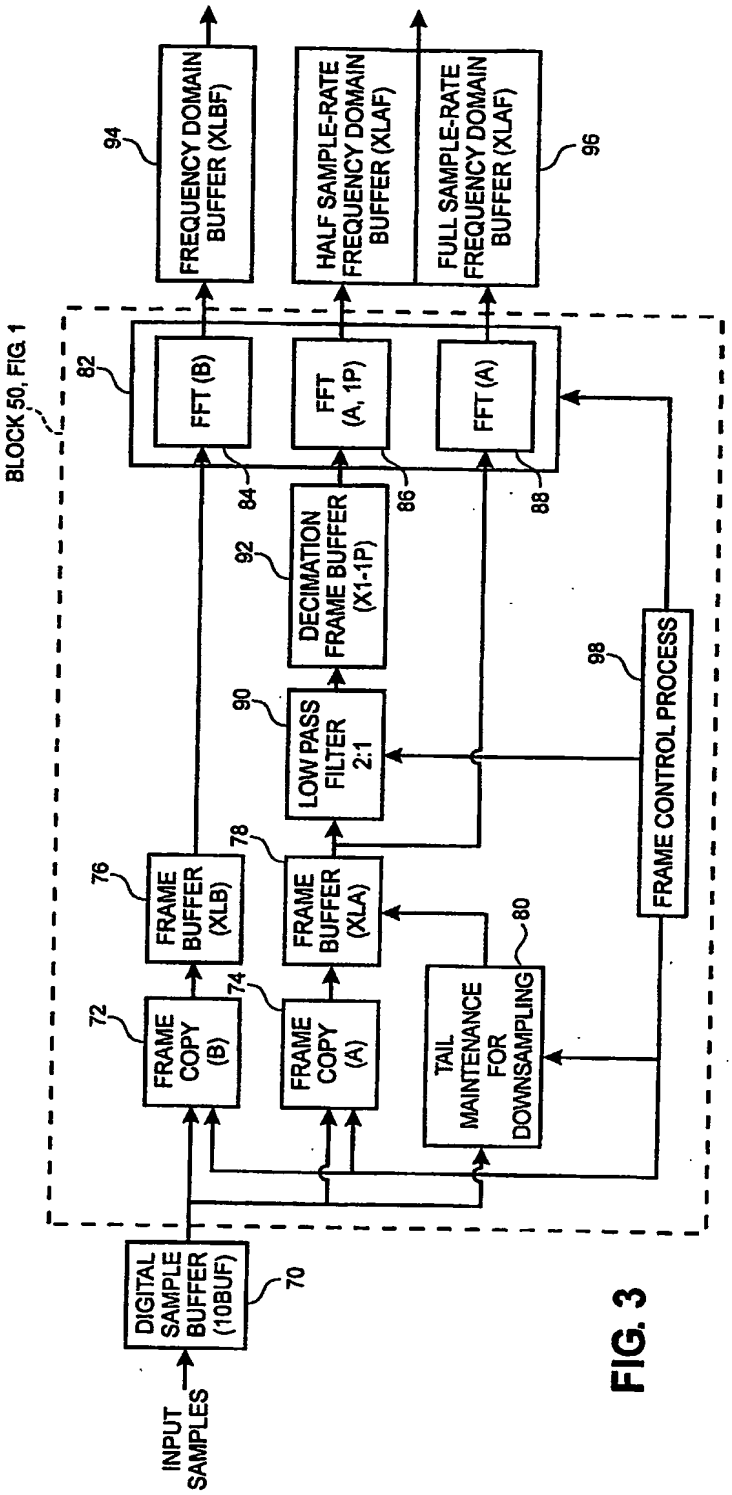

BLOCK 50, FIG. 1
FREQUENCY DOMAIN BUFFER (XLBF)
94
HALF SAMPLE-RATE FREQUENCY DOMAIN BUFFER (XLAF)
FULL SAMPLE-RATE FREQUENCY DOMAIN BUFFER (XLAF)
96
FFT (B)
FFT (A, 1P)
FFT (A)
82
84
86
88
DECIMATION FRAME BUFFER (X1-1P)
92
LOW PASS FILTER 2:1
90
FRAME CONTROL PROCESS
98
FRAME BUFFER (XLB)
76
FRAME BUFFER (XLA)
78
FRAME COPY (B)
72
FRAME COPY (A)
74
TAIL MAINTENANCE FOR DOWNSAMPLING
80
DIGITAL SAMPLE BUFFER (10BUF)
70
INPUT SAMPLES

FIG. 3

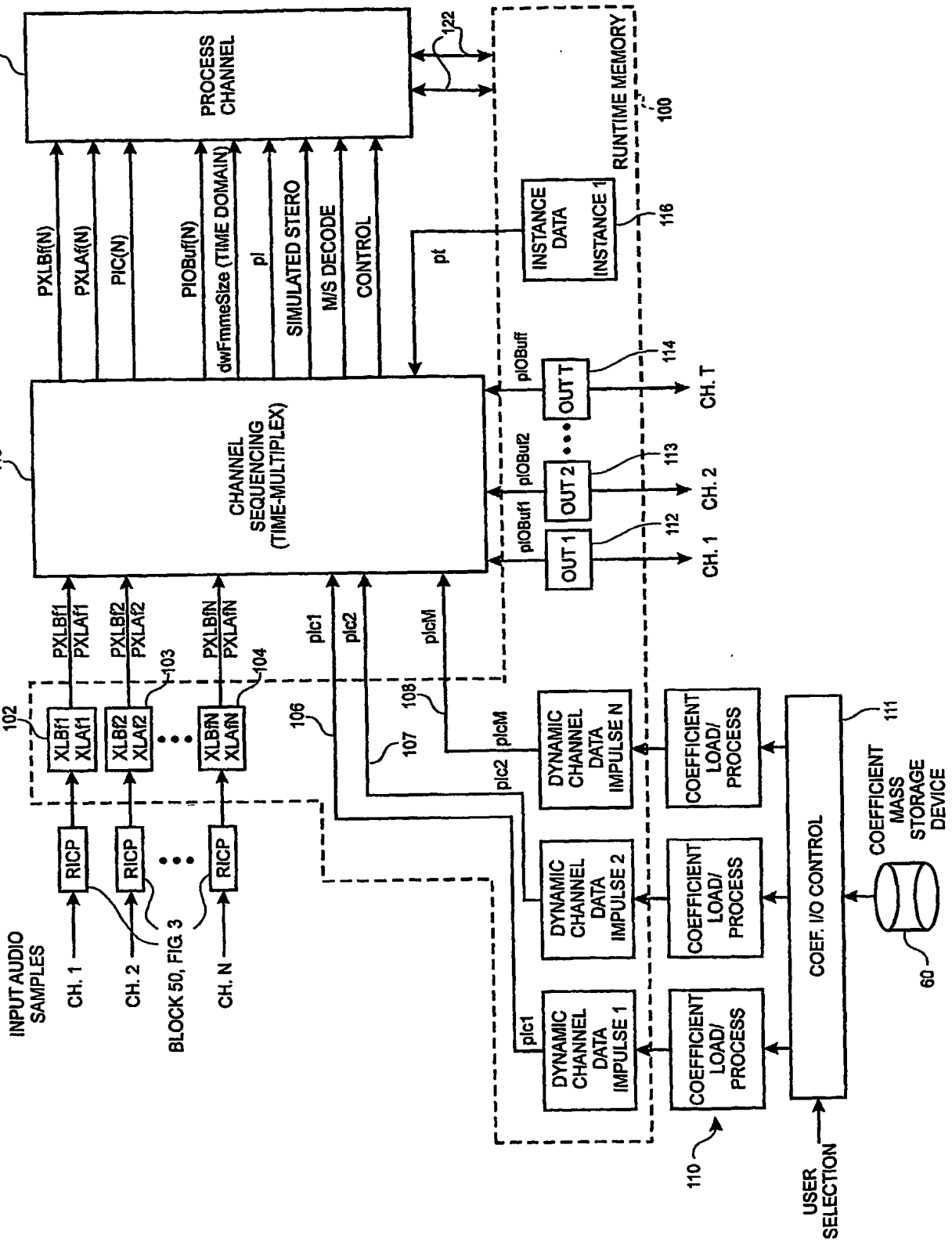

53
PROCESS CHANNEL
122
RUNTIME MEMORY
100
PXLBf(N)
PXLAf(N)
PIC(N)
PIOBuf(N)
dwFrmmeSize (TIME DOMAIN)
pI
SIMULATED STERO
M/S DECODE
CONTROL
pt
INSTANCE DATA
INSTANCE 1
116
118
CHANNEL SEQUENCING (TIME-MULTIPLEX)
pIOBuff
OUT T
114
CH. T
pIOBuf2
OUT 2
113
CH. 2
pIOBuf1
OUT 1
112
CH. 1
PXLBf1
PXLAf1
PXLBf2
PXLAf2
PXLBfN
PXLAfN
103
104
102
XLBf1 XLAf1
XLBf2 XLAf2
XLBfN XLAfN
RICP
RICP
RICP
INPUT AUDIO SAMPLES
CH. 1
CH. 2
CH. N
BLOCK 50, FIG. 3
pIc1
pIc2
pIcM
106
107
108
DYNAMIC CHANNEL DATA IMPULSE N
DYNAMIC CHANNEL DATA IMPULSE 2
DYNAMIC CHANNEL DATA IMPULSE 1
COEFFICIENT LOAD/ PROCESS
COEFFICIENT LOAD/ PROCESS
COEFFICIENT LOAD/ PROCESS
COEF. I/O CONTROL
111
COEFFICIENT MASS STORAGE DEVICE
60
110
USER SELECTION

FIG. 4

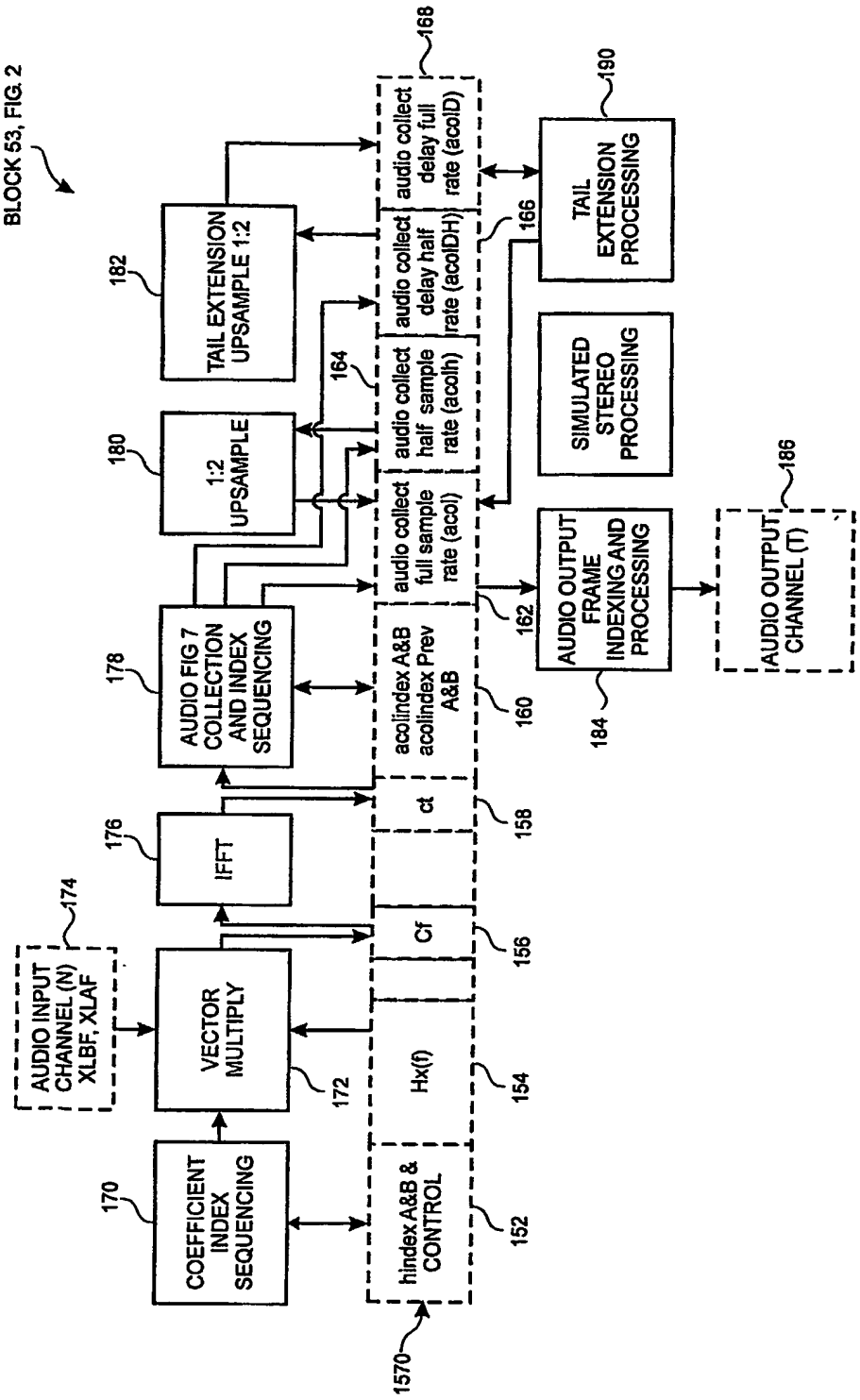

BLOCK 53, FIG. 2
AUDIO INPUT CHANNEL (N) XLBF, XLAF
174
VECTOR MULTIPLY
172
COEFFICIENT INDEX SEQUENCING
170
IFFT
176
AUDIO FIG 7 COLLECTION AND INDEX SEQUENCING
178
1:2 UPSAMPLE
180
TAIL EXTENSION UPSAMPLE 1:2
182
hindex A&B & CONTROL
152
Hx(f)
154
Cf
156
ct
158
acolindex A&B
acolindex Prev A&B
160
audio collect full sample rate (acol)
audio collect half sample rate (acolh)
164
audio collect delay half rate (acolDH)
166
audio collect delay full rate (acolD)
168
1570
AUDIO OUTPUT FRAME INDEXING AND PROCESSING
162
184
SIMULATED STEREO PROCESSING
TAIL EXTENSION PROCESSING
190
AUDIO OUTPUT CHANNEL (T)
186

FIG. 5

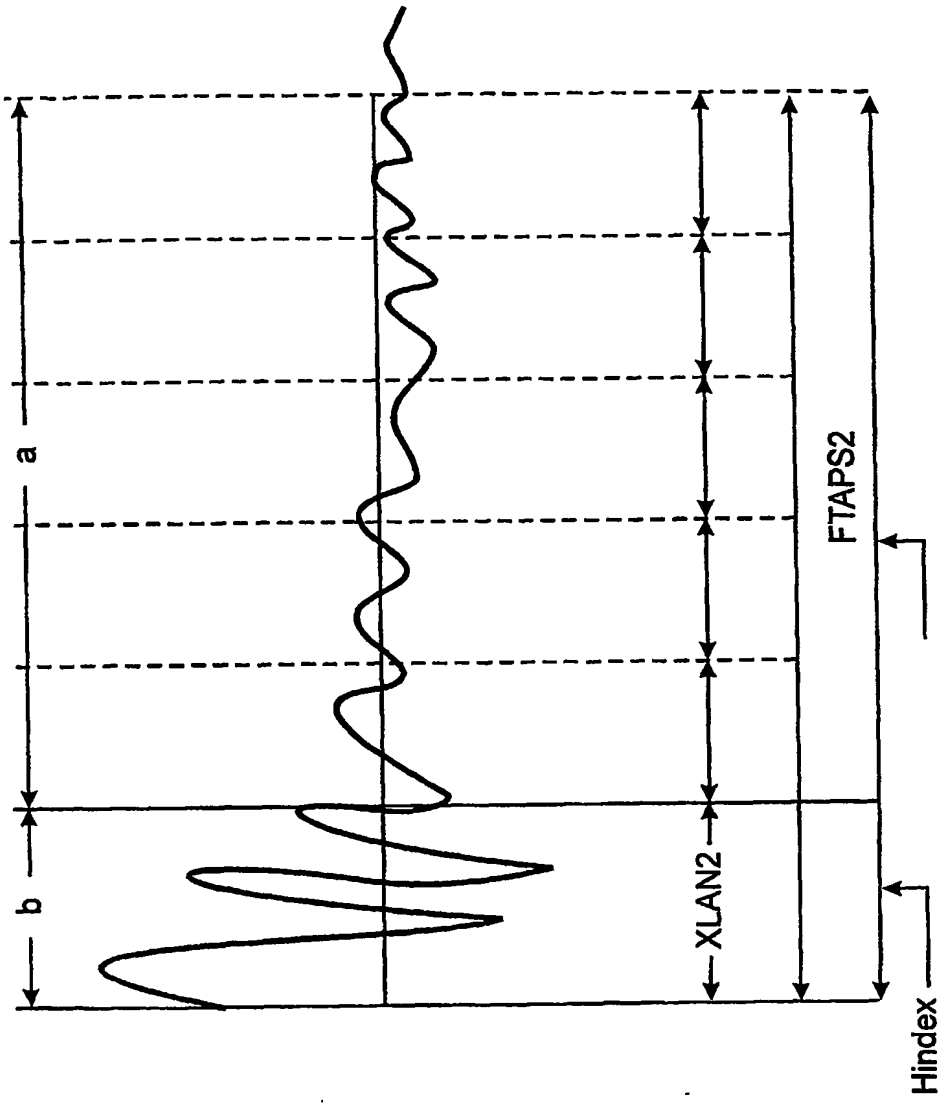


FIG. 6

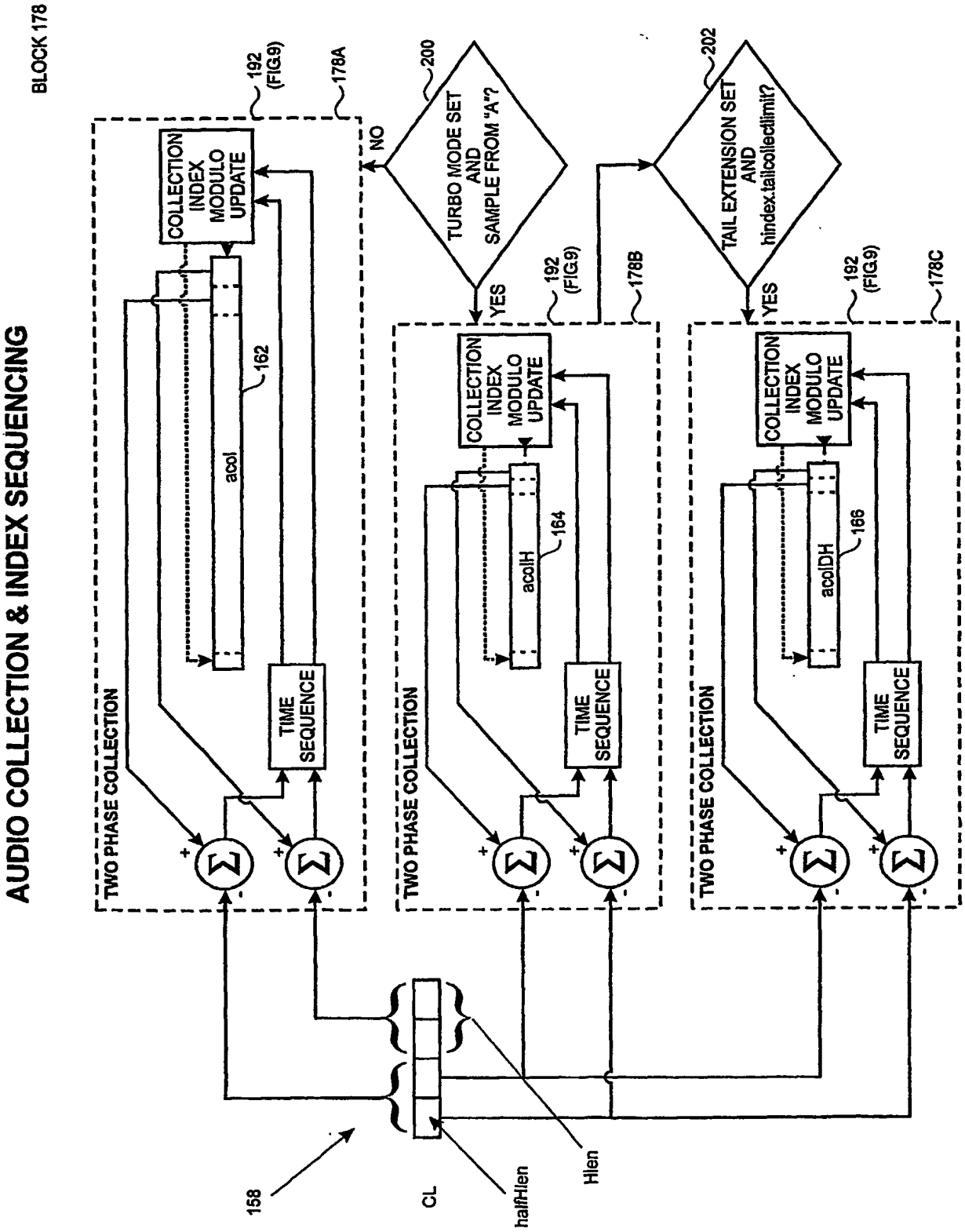

AUDIO COLLECTION & INDEX SEQUENCING
BLOCK 178
TWO PHASE COLLECTION
192 (FIG.9)
178A
COLLECTION INDEX MODULO UPDATE
acol
162
TIME SEQUENCE
NO
200
TURBO MODE SET AND SAMPLE FROM "A"?
YES
178B
acolH
164
202
TAIL EXTENSION SET AND hindex.tailcollectlimit?
178C
acolDH
166
158
CL
halfHlen
Hlen

FIG. 7

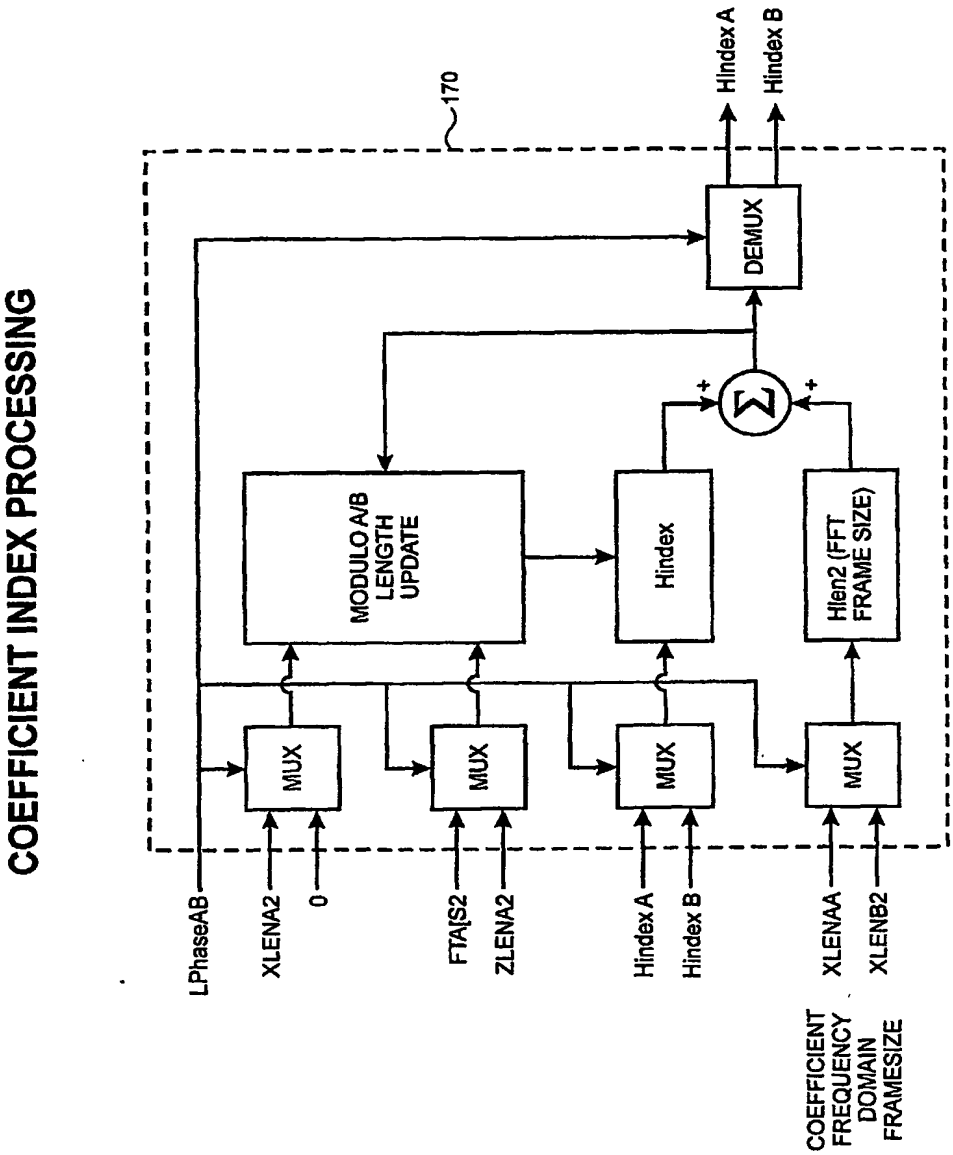

COEFFICIENT INDEX PROCESSING
170
Hindex A
Hindex B
DEMUX
MODULO A/B LENGTH UPDATE
Hindex
Hlen2 (FFT FRAME SIZE)
MUX
MUX
MUX
MUX
LPhaseAB
XLENA2
0
FTA[S2
ZLENA2
Hindex A
Hindex B
XLENAA
XLENB2
COEFFICIENT FREQUENCY DOMAIN FRAMESIZE

FIG. 8

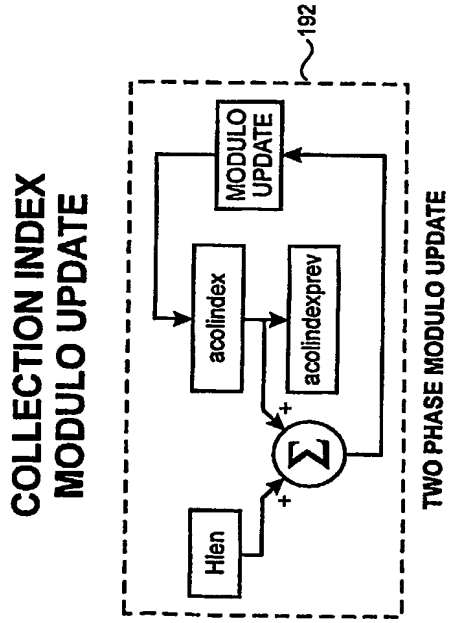

COLLECTION INDEX
MODULO UPDATE
192
MODULO UPDATE
acolindex
acolindexprev
Hlen
TWO PHASE MODULO UPDATE

FIG. 9

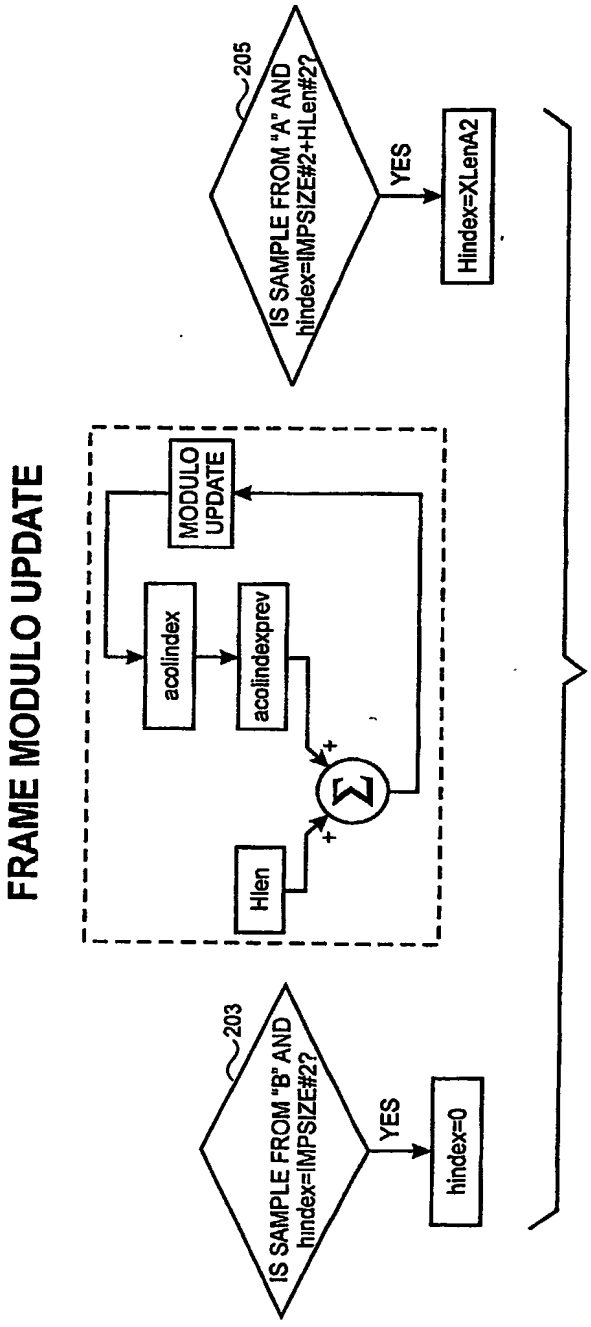

FRAME MODULO UPDATE
MODULO UPDATE
acolindex
acolindexprev
Hlen
205
IS SAMPLE FROM "A" AND hindex=lMPSIZE#2+HLen#22
YES
Hindex=XLenA2
203
IS SAMPLE FROM "B" AND hindex=lMPSIZE#2?
YES
hindex=0

FIG. 10

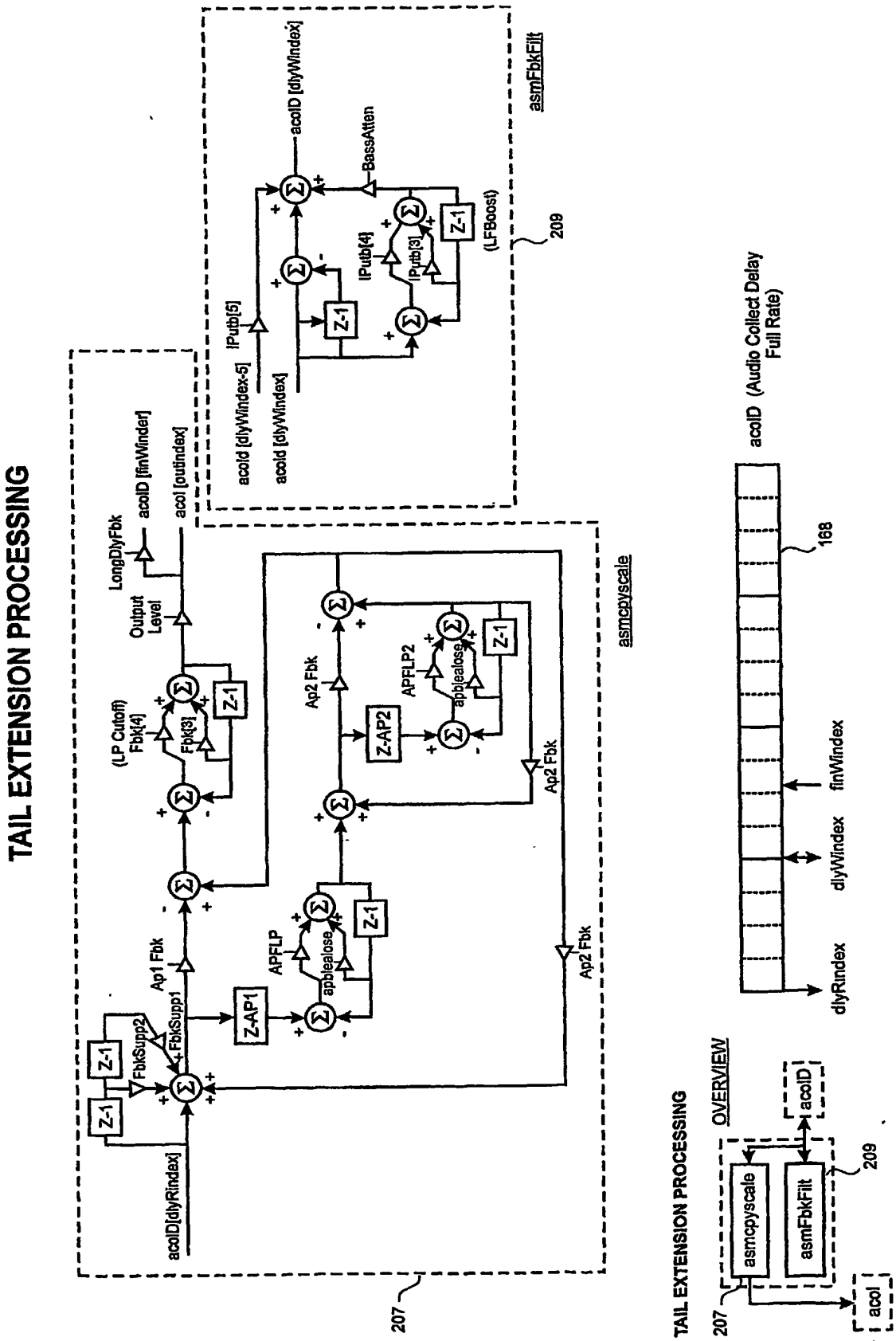

TAIL EXTENSION PROCESSING
asmFbkFilt
acolD [dlyWindex]
BassAtten
(LFBoost)
IPutb[4]
IPutb[3]
IPutb[5]
acolD [dlyWindex-5]
acolD [dlyWindex]
Z-1
209
asmcpyscale
LongDlyFbk
acolD [finWinder]
acol [outindex]
Output Level
(LP Cutoff) Fbk[4]
Fbk[3]
Ap1 Fbk
FbkSupp1
FbkSupp2
Z-AP1
APFLP
applealose
Ap2 Fbk
Z-AP2
APFLP2
acolD[dlyRIndex]
207
acolD (Audio Collect Delay Full Rate)
168
finWindex
dlyWindex
dlyRIndex
TAIL EXTENSION PROCESSING
OVERVIEW
asmcpyscale
asmFbkFilt
acolD
acol

FIG. 11

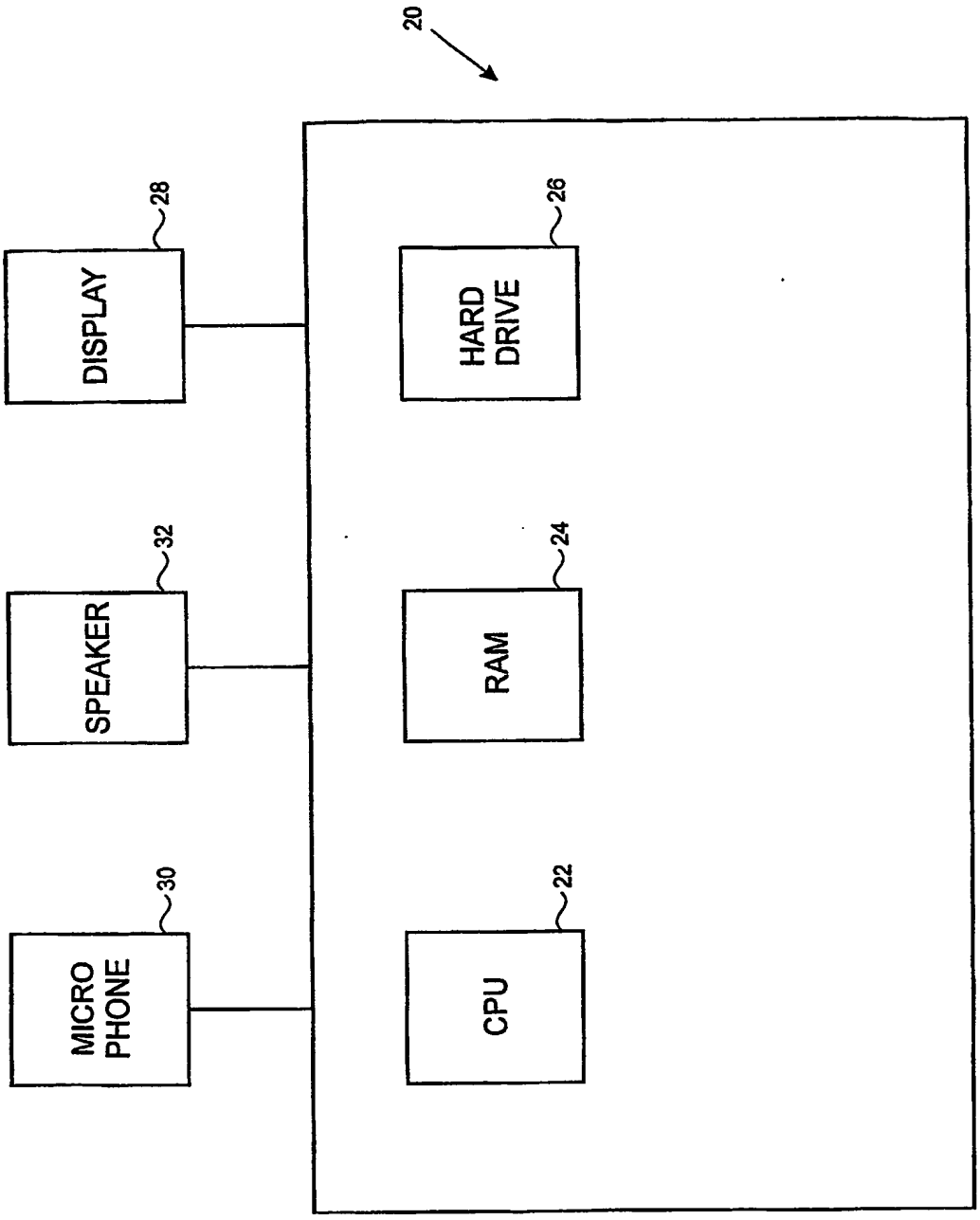

20
28
DISPLAY
26
HARD DRIVE
32
SPEAKER
24
RAM
30
MICRO PHONE
22
CPU

FIG. 12